

Appl. No. 10/813,409
Amtd. Dated July 9, 2007
Reply to Office Action of April 10, 2007

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Amendments to the Claims

This listing of claims will replace the prior version and listing of claims in the application:

Listing of Claims:

Claim 1 (currently amended):

A method of manufacturing an electromagnetic interference shield comprising the steps of:

(1) preparing a substrate and ~~at least one a plurality of~~ target modules~~[[,]]~~ and mounting ~~them the substrate and at least one the~~ ~~plurality of target modules~~ in a sputtering chamber, wherein each target module has a target bonded thereto, and said target is made from an electrically conductive material;

(2) evacuating the sputtering chamber to a predetermined degree of vacuum;

(3) introducing a working gas into the sputtering chamber to a predetermined gas pressure level;

(4) applying to a voltage to the target module using a power supply, thus sequentially activating a magnetron sputtering process between the respective target module modules and the substrate, and thereby sequentially depositing at least one a plurality of electrically conductive layer layers from the target modules module onto the substrate until a desired thickness is achieved on the substrate.

Claim 2 (original):

The method as claimed in claim 1, wherein said degree of vacuum is to be controlled in a range of 10^{-8} to 10^{-4} torr.

Claim 3 (original):

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The method as claimed in claim 1, wherein said gas pressure level is maintained in a range of 10^{-3} to 10^{-1} torr.

Claim 4 (original):

The method as claimed in claim 1, wherein a flow rate of said working gas is controlled to be between 2 and 80 SCCM.

Claim 5 (original):

The method as claimed in claim 1, wherein said power source is a direct current power source.

Claim 6 (original):

The method as claimed in claim 1, wherein said voltage between the target module and the substrate is in a range between 200 and 1000 volts, and a power density of the target is in a range between 20 and 70 W/cm².

Claim 7 (original):

The method as claimed in claim 1, wherein said electrically conductive is a metal layer.

Claim 8 (original):

The method as claimed in claim 7, wherein the target is made from nickel.

Claim 9 (original):

The method as claimed in claim 7, wherein the target is made from copper.

Claim 10 (original):

The method as claimed in claim 7, wherein the target is made from stainless steel.

Claim 11 (original):

The method as claimed in claim 1, wherein the target is a composite

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target, which is divided into a plurality of portions, each portion being made from different electrically conductive materials.

Claim 12 (original)

The method as claimed in claim 11, wherein said composite target is divided into three portions respectively made from nickel, copper and stainless steel.

Claim 13 (original)

The method as claimed in claim 11, wherein said substrate is made from resin.

Claim 14 (original)

The method as claimed in claim 13, wherein said resin has at least one component selected from the group of polyvinyl chloride, polyethylene terephthalate, acrylonitrile-butadiene-styrene, polycarbonate, polyimide, polyetherimide, polyphenylene sulfide, polysulfone, polystyrene, glycol-modified polyester, polypropylene, and liquid crystal polymers.

Claim 15 (currently amended)

A method of manufacturing an electromagnetic interference shield comprising the steps of:

(1) preparing a substrate and ~~at least one a plurality of target module~~ modules[[.]] and mounting them the substrate and at least one the plurality of target modules in a sputtering chamber, wherein each target module has a target bonded thereto, and said target is made from an electrically conductive material;

(2) controlling the chamber in a designated air pressure level;

(3) applying to a voltage to the target module using a power supply, thus sequentially activating a magnetron sputtering process between the

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respective target module modules and the substrate, and thereby sequentially depositing ~~at least one~~ a plurality of electrically conductive layer layers from the target modules module onto the substrate until a desired thickness is achieved on the substrate.

Claim 16 (new):

The method as claimed in claim 15, wherein said degree of vacuum is to be controlled in a range of 10^{-8} to 10^{-4} torr.

Claim 17 (new):

The method as claimed in claim 15, wherein said gas pressure level is maintained in a range of 10^{-4} to 10^{-1} torr.

Claim 18 (new):

The method as claimed in claim 15, wherein a flow rate of said working gas is controlled to be more than 2 SCCM and less than 25 SCCM, or more than 25 SCCM and less than 80 SCCM.

Claim 19 (new):

The method as claimed in claim 15, wherein said voltage between the target module and the substrate is more than 200 volts and less than 400 volts, or more than 600 volts and less than 1000 volts; and a power density of the target is more than 20 W/cm^2 and less than 70 W/cm^2 .